

46	Mr. Tebbutt, Observations of Variable Stars.						LI. I,
Epoch.	Observer.	θ_0	θ_c	$\theta_0 - \theta_c$	ρ_0	ρ_c	$\rho_0 - \rho_c$
1859.63	Dawes	347°1	347°2	-0°1	1''71	1''63	+0°08
1878.46	Burnham	24.4	22.6	+1.8	0.99	1.10	-0.11
1879.468	„	26.5	26.3	+0.2	1.13	1.01	+0.12
1880.455	„	30.1	30.4	-0.3	0.70	0.92	-0.22
1880.613	„	33.1	31.3	+1.8	0.90	0.90	0.0
1881.43	„	29.4	35.7	-6.3	0.51	0.81	-0.30
1888.733	„	{ "Single with 36-inch refractor" }		273.7	0.60
1889.502	„	281.2	281.2	0.0	0.65	0.68	-0.03
1890.49	„	285.1	288.6	-3.5	0.56	0.75	-0.19

According to the above elements the minimum distance between the components occurred about 1885.50, when the position angle was 156°·75 and the distance 0''·18. The angular motion of the companion at that time was at the rate of 114° per annum, or about 1° in 3.15 days!

The primary star was measured 5.21 magnitude at Oxford, and 5.36 at Harvard, and the companion was estimated 10½ to 12 by Burnham.

On the assumption that the combined mass of the components is equal to the mass of the Sun, the "hypothetical parallax" would be

$$\pi = a P^{-\frac{2}{3}} = 0''\cdot08.$$

Observations of the Variable Star R Carinæ from November, 1886, to June, 1890. By John Tebbutt.

My last-published observations of this interesting variable are to be found in vol. xlv. of the *Monthly Notices*, and extend from September, 1883, to April, 1886. The following are all the results which I have obtained since April, 1886, and the comparison stars are the same as employed on previous occasions. In my communication above referred to I assigned 312 days as the approximate period from maximum to maximum. Professor Chandler has since discussed the published observations of this star and has arrived at a period of 312.14 days.

Concluded Magnitude of R. Carinæ.

Date.	Mag.	Date.	Mag.	Date.	Mag.
1886, Nov. 16	6.5	1887, April 1	8.7	1887, June 21	8.7
„ Dec. 18	5.4	„ „ 8	8.7	„ July 16	8.4
„ „ 22	5.5	„ „ 23	9.0	„ Oct. 22	5.4
„ „ 27	5.5	„ May 9	9.2	„ Dec. 8	6.9
1887, Jan. 14	5.9	„ „ 24	9.2	„ „ 17	7.8
„ Mar. 17	8.5	„ June 12	9.1	1888, Jan. 2	8.5

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Date.	Mag.	Date.	Mag.	Date.	Mag.
1888, Jan. 20	8.7	1888, Dec. 5	8.6	1889, July 22	5.7
" " 31	8.8	" " 23	9.0	" Dec. 13	9.2
" Feb. 7	8.8	1889, Jan. 5	9.1	" " 25	9.2
" " 16	9.0	" " 22	9.2	1890, Jan. 8	9.2
" " 21	9.0	" " 28	9.0	" " 22	8.7
" Mar. 3	9.1	" Feb. 21	9.0	" Feb. 26	8.5
" " 8	9.1	" Mar. 4	8.8	" Mar. 15	8.1
" " 14	9.2	" " 21	8.5	" April 7	5.8
" " 19	9.2	" April 1	8.4	" " 11	5.3
" " 28	9.1	" " 30	7.8	" " 18	5.3
" April 12	9.0	" June 3	5.2	" " 23	5.5
" " 18	9.0	" " 7	5.0	" " 26	5.5
" " 27	9.0	" " 13	4.9	" May 7	5.6
" May 4	8.9	" " 17	4.9	" " 8	5.7
" " 13	8.7	" " 21	4.7	" " 13	5.8
" " 19	8.6	" " 24	4.7	" " 19	5.9
" June 8	8.0	" " 29	4.9	" " 23	6.1
" " 12	8.0	" July 4	5.0	" June 11	6.6
" " 24	7.9	" " 7	5.0	" " 20	6.8
" July 5	7.1	" " 14	5.0		

Windsor, N.S. Wales :
September 25, 1890.

*Observations of the Solar Eclipse of 1890 June 16-17, made at
the Royal Observatory, Greenwich.*

(Communicated by the Astronomer Royal.)

The observations of this eclipse with the south-east equatorial were directed to the determination of the corrections to the Moon's R.A. and N.P.D. and to the semi-diameters of the Sun and Moon. The circumstances of this eclipse were, however, not favourable for determination of corrections to the semi-diameters.

Owing to the cloudy weather it was only possible to make a few observations on the morning of June 17; and though an extended programme of five groups of observations had been drawn up, two groups only were represented in the results, and the corrections to the Moon's R.A. and N.P.D. could not be obtained independently of the corrections to semi-diameters. The following measures were made by Mr. Turner, the declination microscopes being read by Mr. Downing:—